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INCREASING IMPLEMENTATION OF SPECIAL EDUCATION INSTRUCTION IN MAINSTREAM PRESCHOOLS: DIRECT AND GENERALIZED EFFECTS OF NONDIRECTIVE CONSULTATION

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Two studies evaluated a consultation strategy for increasing teachers' implementation of instruction related to specific Individualized Education Plan objectives for handicapped children mainstreamed into regular preschool programs. In the first study, teachers viewed videotaped sequences of regular classroom routines and were asked to generate ideas for embedding IEP-related instruction into those routines. All teachers demonstrated increases in instructional behaviors in targeted routines, and 2 of the 3 teachers increased instruction in additional settings that had not been the focus of the consultation. Children demonstrated concomitant increases in IEP-targeted behaviors. In follow-up questionnaires and interviews, teachers reported increased confidence in their ability to implement specialized instruction. These findings were replicated in a second study in which the videotaping was replaced by teacher interview, and in which the consultation was carried out by a previously untrained special education teacher.

DESCRIPTORS: preschool children, staff management, language, teacher training, mainstreaming

Although legal mandates for providing special education programs within the least restrictive environment (LRE) have existed for over a decade, the actual implementation of those mandates has been highly problematic (Ballard-Campbell & Semmel, 1981; Gerber, 1984). A recurring question has involved the ability of general education programs to respond to the individual needs of students with disabilities. Available empirical data suggest that very limited implementation of Individualized Education Plan (IEP)-related instruction occurs in regular classrooms (Nevin, McCann, & Semmel, 1983). This unfortunately corroborates the concerns of many parents, teachers, and administrators regarding possible problems with mainstreaming programs. For example, in a recent interview study conducted with parents, teachers, and administrators from preschool programs in the state of Washington, the ability of regular preschools to recognize and respond to children's individual needs was one of the most frequently expressed reservations to mainstreaming (Peck, Wandschneider, Hayden, & Richarz, 1987).

Concern with the foregoing problems has frequently led to recommendations for provision of in-service training or changes in preservice training programs to increase emphasis on special education techniques (Lewis & Doorlag, 1987). Although this would clearly be useful, such training is not widely available to teachers in the field. Clearly needed are intervention techniques that increase implementation of IEP-related instruction without demanding investment of large amounts of resources in specialized training.

Jones, Fremouw, and Carples (1977) and Page, Iwata, and Reid (1982) have developed pyramid

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training procedures for increasing staff implementation of instruction in residential institutions. These procedures are unique in emphasizing an indirect training strategy wherein the experimenters train supervisors who, in turn, train direct-care staff to use behavioral teaching procedures with residents. Whereas the pyramidal techniques reported by Jones et al. (1977) and Page et al. (1982) included training aimed at development of new teaching repertoires, the present research was based on the assumption that many of the instructional needs of mainstreamed children could be addressed adequately using instructional behaviors already in the repertoire of most preschool teachers. The focus of our research was on increasing teachers' use of relatively simple instructional techniques to teach specific IEP-targeted behaviors.

In designing an intervention strategy to address these issues, we made assumptions based on two bodies of conceptual and empirical work. First, we assumed that regular class teachers would implement specialized instruction more readily to the extent that it did not demand major departures from existing classroom routines. This suggested the use of techniques based on naturalistic models of instruction (Guess & Helmstetter, 1986; Hart & Risley, 1975; Warren & Rogers-Warren, 1985). Although these techniques cover a broad set of procedural characteristics, they share an emphasis on the use of naturally occurring events in the child's everyday environment as instructional occasions (Goetz, Gee, & Sailor, 1985; Halle, Marshall, & Spradlin, 1979; Hart & Risley, 1975; Koegel, Dyer, & Bell, 1987; Neef, Walters, & Egel, 1984; Peck, 1985; Rogers-Warren & Warren, 1980).

Second, we assumed that regular class teachers would respond more favorably to training that was highly participatory in nature. Although relatively few studies have directly addressed this issue, some evidence suggests that involving teachers and other direct line staff in the design and management of instruction they are expected to carry out increases their actual implementation of that instruction (Burgio, Whitman, & Reid, 1983). Similarly, Patterson and Forgatch (1985) demonstrated that some clients comply with therapeutic recommendations more frequently when exposed to nondirective versus directive counseling interventions.

The present research evaluated a nondirective consultation strategy for increasing implementation of IEP-related instruction for children with mild to moderate language delays and mental retardation who were mainstreamed into regular preschool and day-care programs. We designed a procedure to assess the ability of regular preschool teachers to generate effective instructional strategies with minimal direction from specialized support staff and to generate specific instructional strategies that were feasible for implementation within daily routines in the mainstream settings. Results of an initial experimental evaluation of the procedure, as well as a systematic replication, are reported here.

EXPERIMENT 1

Method

Participants and Setting

The first study was conducted in a large community preschool and day-care center, with approximately 60 to 70 children enrolled in either full-time, part-time, or after-school programs. The average adult/child ratio was 1:7. Daily activities included art and science projects, large-group circle times, self-help skills, small-group activities and projects, and free play. Teachers worked in teams of two, writing objectives and planning activities or lessons on a weekly basis. Additional full-time and part-time staff provided assistance on a daily basis.

Three regular teachers were selected to participate in the initial study. Each of the teachers had completed a baccalaureate-level degree in early childhood education. However, the teachers had little direct experience with children with handicaps and none had received training in special education.

The IEP-targeted behaviors of 3 mainstreamed handicapped children enrolled in the program were monitored to assess the effects of the experimental procedure. Each child had been diagnosed as developmentally delayed and identified for special

education placement using the Washington State criteria for developmental disabilities.

Carl was 5 years of age and had mild developmental delays in the areas of language and social development. Instructional objectives for Carl focused on language use, compliance with teacher directions, and social-interaction skills with peers. Ben, who was 3.3 years of age, was diagnosed as moderately developmentally delayed in cognitive, language, social, and motor areas. He demonstrated a variety of behavior problems, including screaming, hitting, and excessive crying. Ben had limited self-feeding skills and had not been toilet trained.

Paul, also aged 3.3, was diagnosed as moderately developmentally delayed. He demonstrated limited language, using some one-word labels for objects or actions. Paul also displayed some problematic behaviors, including tantrums and aggression. His social interactions with peers were infrequent.

All of the experimental procedures were implemented by the second author, who was employed part-time as a special education teacher in the program. She had no supervisory status with respect to the teachers.

Procedure

Each teacher was observed with 1 student, based on existing group assignments. One training and one generalization setting were selected from existing activities within the program on the basis of two criteria. First, the setting or activity had to include opportunities for the child to engage in the targeted behavior (see specific behaviors below). Second, the activity had to allow observers to carry out recording procedures. For example, if the child's targeted behavior was an expressive language skill, the teacher/child pair might be observed during both a small-group art activity and during a circle time. They would not be observed during individual fine-motor activity (not as conducive to language instruction), nor during an outside recess time (not conducive to observation because the outside area was noisy). Activities typically lasted for 10 to 15 min. Intervention procedures were implemented only for the designated training setting for each teacher. Teacher/child pairs were also observed in the second (generalization) setting to assess changes in targeted teacher and child behaviors following intervention. Intervention settings, generalization settings, and child target behaviors for each teacher/child pair are described in Table 1.

Target behavior selection. For each teacher/child pair, one specific objective was selected by the experimenters from the student's existing IEP to be used as the focus of intervention. Objectives were chosen on the basis of feasibility of implementation for the settings available for observation. Expressive and receptive language objectives were typically chosen as the focus for the study because of their relevance to a multiplicity of settings and activities within the normal preschool routines. Teachers in the center had copies of each child's IEP available, but they had not been involved in the writing of the IEPs. None of the teachers had been observed to use the IEP for planning or evaluation before the initiation of the study.

Efforts to facilitate implementation of IEP objectives prior to this study were similar to those Nevin et al. (1983) described as typical of most school programs. They included (a) providing the center with copies of IEPs, (b) general presentation of IEP objectives by a consulting special education teacher, and (c) scheduled consultation with related services staff (e.g., speech therapists).

Measurement System

Direct observations of instruction were conducted in both training and generalization settings for each teacher/child pair for the 7-week period of the study. Observations were conducted once each observation day for both the training and generalization settings. Observations were conducted 3 of the 4 days per week that the handicapped children attended the program. Observers sat outside the immediate area of the activity, but close enough to hear the vocal/verbal behavior of both the teacher and the children. Frequency counts were recorded for each targeted teacher and child behavior within 10-s intervals signaled to observers via earplug and audiotape apparatus.

Response categories. Observational categories were developed to measure both teacher and child

Table 1
Settings and Objectives

Teacher/child pair	Setting		Objectives
	Training	Generalization	
Ann/Carl	Large group circle	Snack	Follow simple directions
Alice/Ben	Lunch	Free play	Label actions
Carol/Paul	Small group circle	Small group structured activities	Answer yes/no questions

behavior related to implementation of IEP objectives. Teacher behavior categories were conceptualized and defined in broad terms in order to capture the full range of instructional strategies used both before and after the intervention was carried out, because these were, by design, developed by the teachers themselves. Response definitions used throughout the study were as follows:

1. Teacher prompts: any behavior demonstrated by the teacher in a direct effort to elicit a targeted response from the child. Such behaviors include verbal prompts (e.g., directions, modeling, etc.), gestural cues (e.g., pointing, hand signals, shaking the head), and/or physical guidance.

2. Teacher consequences: any behavior demonstrated by the teacher in direct response to child performance of a targeted behavior. Such behaviors included praise, positive touch, and verbal or physical corrections.

3. Child behaviors: those behaviors specifically targeted by each child's IEP that were selected for intervention. These included answering yes/no questions (Paul), labeling specific actions (Ben), and following simple directions (Carl).

Interobserver Agreement

Observers were trained using videotape recordings of classroom interactions until they reached a mean agreement level of greater than 80%. They then recorded classroom interactions in the natural setting until 5 consecutive days of greater than 80% agreement were achieved. Agreement checks were carried out subsequently across the entire study during an average of 50% of total observations conducted. Interobserver agreement levels for each response category were calculated by summing the number of agreements (defined as the same frequency count within a given 10-s interval) and dividing that number by the sum of agreements plus disagreements, and multiplying by 100. Nonoccurrences of behaviors were not coded as agreements and were not included in the calculation of interobserver agreement.

Interobserver agreement was computed separately for each response category and for each teacher and student. Agreement levels ranged from 78% to 100%, with a mean of 94% across the coefficients calculated separately for all categories and participants.

Experimental Design

A multiple baseline across subjects design (Baer, Wolf, & Risley, 1968) was used to assess the effects of the intervention across 3 teacher/child pairs in both training and generalization settings. Experimental conditions were as follows:

Baseline. Following an initial period of adjustment to allow children and teachers to become used to the presence of one and sometimes two observers, baseline observations were conducted in each of the training and generalization settings. Teachers were not aware of the specific nature of the observations being conducted. Observers were seated behind children in proximity to activities. Otherwise, all activities were conducted as per usual classroom routine.

Consultation. The intervention was designed to allow each participating teacher to identify independently strategies for implementing a specific behavioral objective. The following procedures were used.

First, an audio-video recording was made of the

teacher/child interactions during the course of the identified training activity for one 10- to 15-min period. Next, the facilitator informed the teacher of the targeted behavioral objective, and the teacher and the facilitator viewed the videotaped recording. The facilitator asked the following questions prior to and after each teacher viewed the videotape: "Can you observe ways in which you were able to address this specific objective in the course of this activity?" and "Can you see any instances where you might have been able to incorporate this objective into this activity?" The teacher was then asked to independently suggest techniques that could be used to address the specific objectives while incorporating them into regular activities. No strategies or techniques were suggested by the facilitator. The facilitator provided positive feedback, such as "that sounds like a good idea," for each suggestion generated.

The teacher was asked to rank the ideas generated, with those that were seen as likely to be most effective and usable ranked highest. The teacher then was asked to choose one or two of the strategies to implement beginning with the next occurrence of the training setting activity. No mention was made of any change in routine or intervention to be implemented outside the training setting.

On the following day, the teacher/child pair was again videotaped in the instructional setting. Facilitator and teacher met again, and the teacher was asked to evaluate informally her implementation of IEP objectives and to identify any modifications that needed to be made in her original plans. No suggestions for changes were made by the facilitator, but the teacher again received positive verbal feedback for each suggestion she generated.

Teacher Ratings and Interviews

To obtain a social validation measure (Kazdin, 1977) for the intervention, teachers were asked to rate the perceived implementability of individual children's objectives both before and after the completion of the intervention procedure. Follow-up interviews were also conducted with each teacher upon completion of data collection to obtain feedback on the intervention process in general. Interview questions included:

1. Did you find the process helpful in developing strategies to implement specific IEP objectives?
2. Would you utilize this process again, should you need similar assistance in the future?
3. Do you now feel more capable of incorporating IEP objectives into your daily instruction than you felt prior to this process?
4. Has your opinion of the general implementability of behavioral objectives for mainstreamed children with special needs changed as a result of your involvement in this process?

RESULTS

Teacher Behavior

Increases in targeted teacher behavior (prompts and consequences) were observed for all 3 of the teachers in the training setting. Similar increases were observed in the generalization setting for 2 of the teachers. Figure 1 depicts the rate of targeted teacher behavior for all 3 teachers during baseline and after the consultation was carried out.

Results for Ann indicated that her rate of providing prompts for IEP-targeted child behaviors in the training setting increased from a mean of 0.03 per minute during baseline to a mean of 0.53 per minute during the 4 weeks of observation after the consultation. Similarly, her rate of providing consequences for targeted child behavior in the training setting increased from no observed occurrences during baseline to a mean of 0.3 per minute following the consultation. Results for Ann in the generalization setting indicated a mean rate of 0.68 for prompts during baseline and a mean rate of 0.9 following consultation. For consequences Ann's rate in the generalization setting was 0.21 during baseline and 0.37 following consultation.

For the second teacher, Alice, results in the training setting revealed increases in prompting from no observed responses during baseline to a mean of 2.27 per minute following consultation. Similar increases in her delivery of consequences were observed, with no responses observed during baseline and a mean of 1.31 per minute following consultation. Generalization results for Alice revealed no

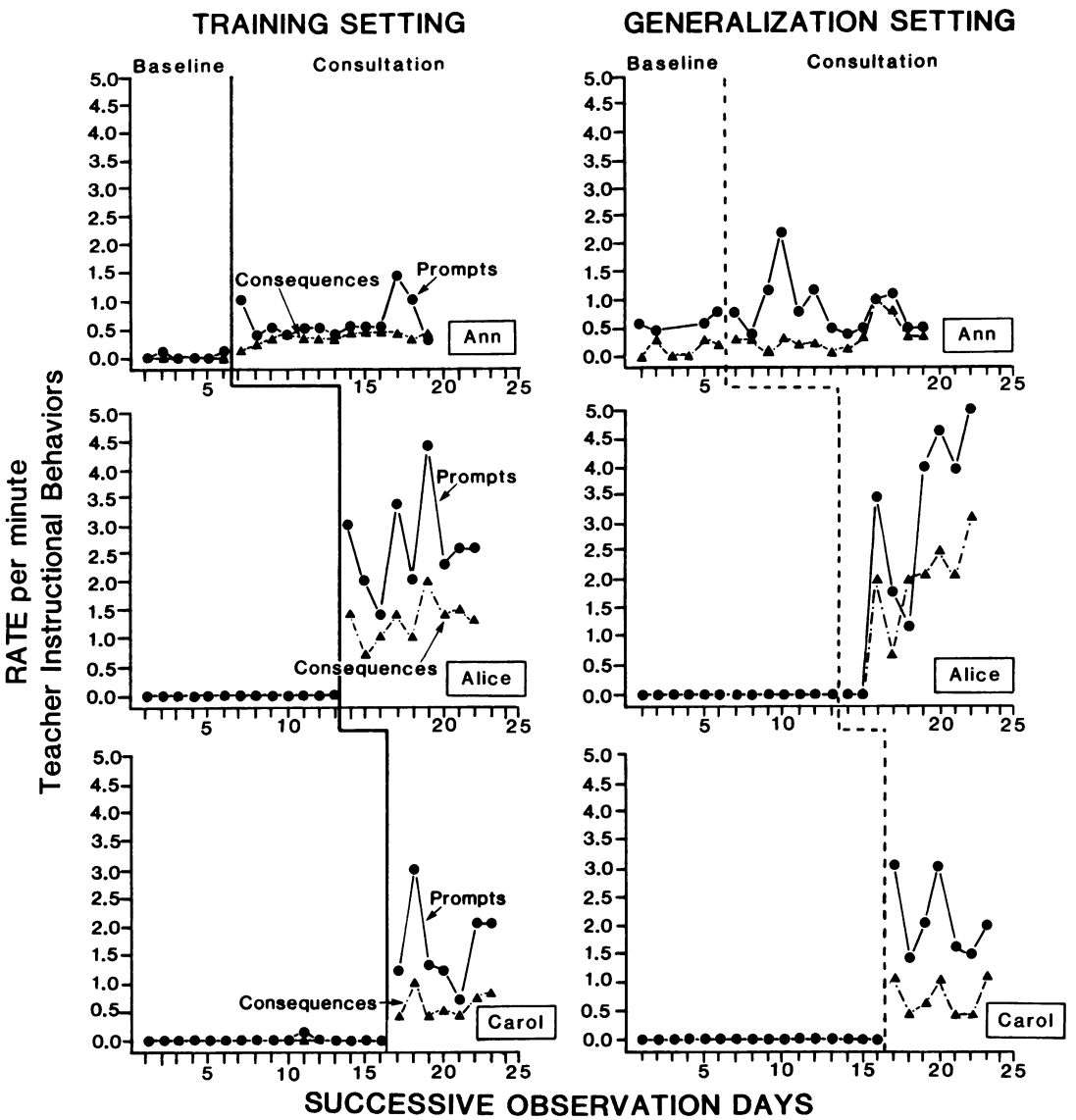

Figure 1. Rate of IEP-related instructional responses of teachers in training and generalization settings.

prompts or consequences for targeted child behavior observed during baseline, with increases in prompting to 2.48 per minute for prompts and 1.37 per minute for consequences.

Results for the third teacher, Carol, were similar to those for Alice. In the training setting, Carol's rate of prompting increased from a mean of 0.03 per minute during baseline to a mean of 1.65 following consultation, and consequences increased from no observed responses during baseline to a mean of 0.56 per minute. Generalization results for Carol revealed no observed instances of either prompting or consequences delivered to the child during baseline and increases to 1.65 per minute for prompts and 0.70 per minute for consequences.

Child Behavior

Changes in IEP-targeted child behaviors were highly correlated with observed changes in teacher behavior in each observation setting. Figure 2 rep-

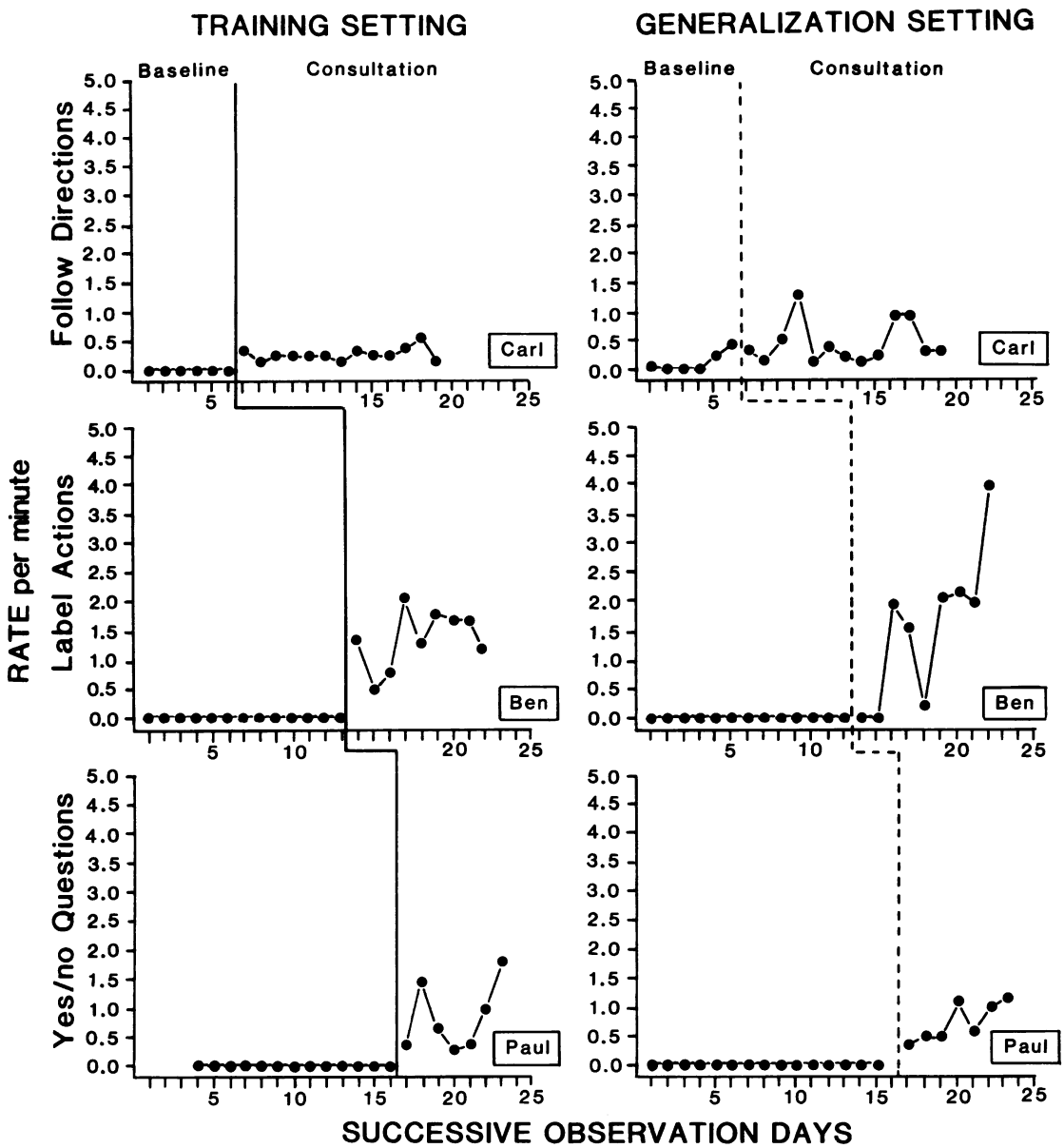

Figure 2. Rate of IEP-targeted responses by students in (teacher) training and generalization settings.

resents child behavior change in both the training and generalization settings.

For Carl there were no targeted behaviors observed during baseline in his teacher's training setting. However, following the consultation intervention with the teacher, Carl's behavior increased to a mean of 0.34 per minute. In the teacher's generalization setting, Carl's targeted behaviors increased from a mean of 0.35 per minute during baseline to a mean of 0.67.

Results for Ben indicated no occurrences of targeted behaviors during baseline in either the training or the generalization setting. Following the consultation with his teacher, Ben's rate for targeted behaviors increased to a mean of 1.56 in the training setting and 1.28 in the generalization setting.

Results for Paul were similar to those for Ben, with no targeted behaviors observed during baseline in either setting. After intervention, Paul's behavior increased to a mean of 0.78 per minute in his teacher's training setting and to 0.72 per minute in the generalization setting.

Teacher Ratings and Interviews

Two of the 3 teachers rated the feasibility of implementation of objectives from each child's IEP more favorably after the consultation. For Ann, no increases were possible, because she rated all of her child's objectives as feasible both before and after the intervention. Alice rated 30% of her child's objectives as more feasible after intervention, and Carol rated 50% of her child's objectives as more feasible after participating in the study.

Interview data included statements by all 3 teachers indicating a greater degree of confidence in their ability to design and implement specialized instruction for children with disabilities, and all 3 teachers stated that they would use the process again. Alice and Carol said that their general opinions of the feasibility of implementation of special instruction within their classrooms had become more positive and optimistic. Ann, who had highly positive views of her ability to design and implement special instruction before the study, maintained these views.

Discussion

Experiment 1 demonstrated increased implementation of instruction related to targeted IEP goals for all 3 teachers in the settings in which the nondirective consultation intervention was carried out. In addition, clear increases in teacher behaviors were observed in a generalization setting for 2 of the teachers. The consultation procedure resulted in actual child behavior change for all 3 children in the training setting and for 2 of the children in the teacher generalization setting.

Generalization setting results for 1 teacher/child pair, Ann and Carl, were inconsistent with the other findings. We speculated that this may have been related to the relatively high rates of teacher behavior observed for Ann during baseline in this setting, indicating that she was already providing Carl with instruction related to this IEP goal. The child behavior involved, "following simple directions," is one that might naturally be incorporated into a large variety of activities, however, without specific attention to it as instruction per se. It is also interesting to note that Ann was the 1 teacher who rated all of her child's instructional objectives as completely feasible before intervention. However, the fact that she did increase instruction for Carl in the training setting suggests that the consultation increased her use of instructional opportunities in this setting. Although Carl's mean rate of following instructions was somewhat higher in the generalization setting after consultation, the functional relationship between this change and the consultation itself, if any, was obscured by an increase in this behavior immediately prior to intervention.

EXPERIMENT 2

In a second experiment, we sought to extend the findings of the initial study in two ways through systematic replication. First, we replaced the video-mediated component of the consultation with a verbal review of the targeted instructional activity, because we wished the procedure to be as easy to implement as possible within the resource constraints of typical preschools and day-care centers. Second, we did not implement the consultation ourselves, but trained an existing special education staff member to do this.

Method

Participants and Setting

The second experiment was carried out in a small neighborhood day-care facility that served 10 to 15 children, including 3 children with mild to moderate disabilities. Activities and curricula in this day-care center were similar to those described above in our initial investigation.

One teacher and 1 teacher aide (both referred to hereafter as teachers) participated in this study. The teacher (Toni) had similar qualifications and experience in early childhood education as those teachers described in Experiment 1. The teacher

aide (Fran) had several years experience working with young children, but had no formal training. Neither the teacher nor the aide had received any training in special education.

Two children who regularly attended the day-care center also participated in the investigation. Charlie was diagnosed as having Down syndrome. Charlie was three years of age and had limited expressive language, using signs or verbal approximations to identify familiar objects, actions, and people. He had limited self-feeding skills and was not toilet trained. Charlie's social interactions with peers were frequent but of limited duration. The other child, Katie, had mild to moderate cognitive and language delays of unknown etiology. Her expressive language was limited to occasional one-word utterances. Katie demonstrated near-normal development in the motor and self-help areas but engaged in social interactions with peers infrequently. Both children had been formally identified as developmentally delayed and in need of special education services according to Washington State administrative criteria. Targeted IEP objectives were selected in the same manner and were similar to those for Experiment 1. For Charlie, the targeted objective was labeling objects with signed or verbal utterances. The objective selected from Katie's IEP was use of two-word constructions.

A special education teacher who regularly consulted at the center participated as the interventionist (consultant) for the 2 teachers. The implementation of IEP-related programming was the specific responsibility of this teacher, but she typically carried out this function by working one-to-one with identified children for brief periods of time on the 2 days per week that she was at the center. The special education teacher viewed this arrangement as ineffective, and she was highly motivated to participate in the study. She had no previous experience or training in specific techniques related to consultation strategies, and she had no supervisory authority over the staff.

Procedure

Observation, target behavior selection, activity selection, and interobserver agreement procedures were conducted as in Experiment 1. The consultation intervention, however, was modified in two ways: (a) by deleting the use of the videorecording, and (b) by training the existing special education teacher to implement the consultation intervention with the day-care teachers.

Interobserver agreement. Interobserver agreement levels were calculated as in Experiment 1. The mean percentage of observer agreement for all categories was 96%, with a range of 73% to 100%.

Experimental Design

As in Experiment 1, a multiple baseline design was used to assess effects of the consultation in the training and generalization settings. Experimental conditions were as follows:

Baseline. Baseline conditions were similar to those described in Experiment 1. These included presentation of targeted instructional objectives for each child to the preschool staff, posting of these objectives in the classroom, and regular provision of consultation time from special education and therapeutic support staff.

Consultation. The intervention was carried out by meeting with the special education teacher on two occasions. In the first meeting we explained the general purpose of the study, described the intervention and its anticipated outcomes, and asked whether she wished to participate. In a second meeting, approximately 45 min long, we presented her with a set of written instructions for implementing the consultation procedure, which had been modified to include a verbal interview rather than the video-mediated review of the targeted activities. These instructions were as follows:

> A central feature of the consulting procedure described below is its reliance on ideas generated by regular classroom teachers as the primary strategies for implementing specialized instruction for students with handicaps. The role of the consultant is focused on clarifying the instructional needs of the child and *facilitating* the production of ideas by the regular teacher for meeting those needs. General procedures for carrying out the consultation process are as follows:
>
> 1. Consultant reviews the child's IEP and

identifies all objectives which might be taught in the context of normal instructional routines.

2. Consultant reviews the activities and related time schedules for the classroom and makes tentative matches between objectives and activities.

3. Consultant meets with the classroom teacher/aide that has responsibility for each targeted routine/time period and identifies one instructional objective which might be addressed in the context of that activity/routine.

4. Consultant asks the classroom teacher/aide to suggest ideas for how instruction related to the objective might be carried out while the regular activity was being conducted (i.e., "embedded" into the regular activity), and lists each idea produced. If the regular teacher is not able to identify any such ideas, the consultant suggests one or two as models, emphasizing that the *teacher* is the best judge of the feasibility of each possible strategy.

5. The consultant and the teacher review the list of ideas and the teacher is asked to select one or two to implement the following day.

6. The consultant meets with the teacher the first day of implementation following the relevant activity, and asks the teacher to evaluate the success of the intervention. The consultant provides positive feedback for the teacher's self-evaluation regardless of the outcomes of the actual intervention. The teacher is asked to identify any needs for modification of the implementation strategy based on either its effectiveness or its implementability. Again, the consultant provides positive feedback to the teacher for generating ideas and modifying strategies. To the extent that the child begins to show behavior change, the teacher is also complimented on the effectiveness of his/her planning and instruction.

The special education teacher then carried out the consultation with each of the day-care teachers on successive days when she was regularly scheduled to work with children at the center.

Results

Teacher Behavior

Results for teacher behavior (prompts and consequences) were similar to those obtained in Experiment 1. Both teachers demonstrated increases in implementation of IEP-related instruction in both the training and the generalization settings after the facilitation intervention had been conducted. Figure 3 depicts results for teacher implementation of prompts and consequences related to IEP-targeted child behaviors in Experiment 2.

Child Behavior

IEP-targeted behaviors increased for both Charlie and Katie subsequent to the implementation of the consultation intervention with each of their teachers. Charlie's behavior in the training setting increased from a mean of 0.04 per minute during baseline to a mean of 0.52 per minute after the consultation. In the generalization setting Charlie's rate of IEP-related behavior increased from a mean of 0.14 per minute before the consultation to a mean of 0.61 per minute. Katie's rate of targeted behaviors increased in the training setting from a baseline mean of 0.08 per minute to a mean of 0.48 per minute after the consultation. In the generalization setting her IEP-targeted behavior increased from a mean of 0.02 per minute during baseline to a mean of 0.50 per minute. Figure 4 presents observational data for child behavior during Experiment 2.

Discussion

Results of Experiment 2 replicate and extend the findings of the initial study. Specifically, the nondirective consultation intervention was again observed to result in increased implementation of IEP-related instruction, both in direct training and generalization settings. In Experiment 2 it was further demonstrated that increased IEP implementation could be achieved without the use of video-

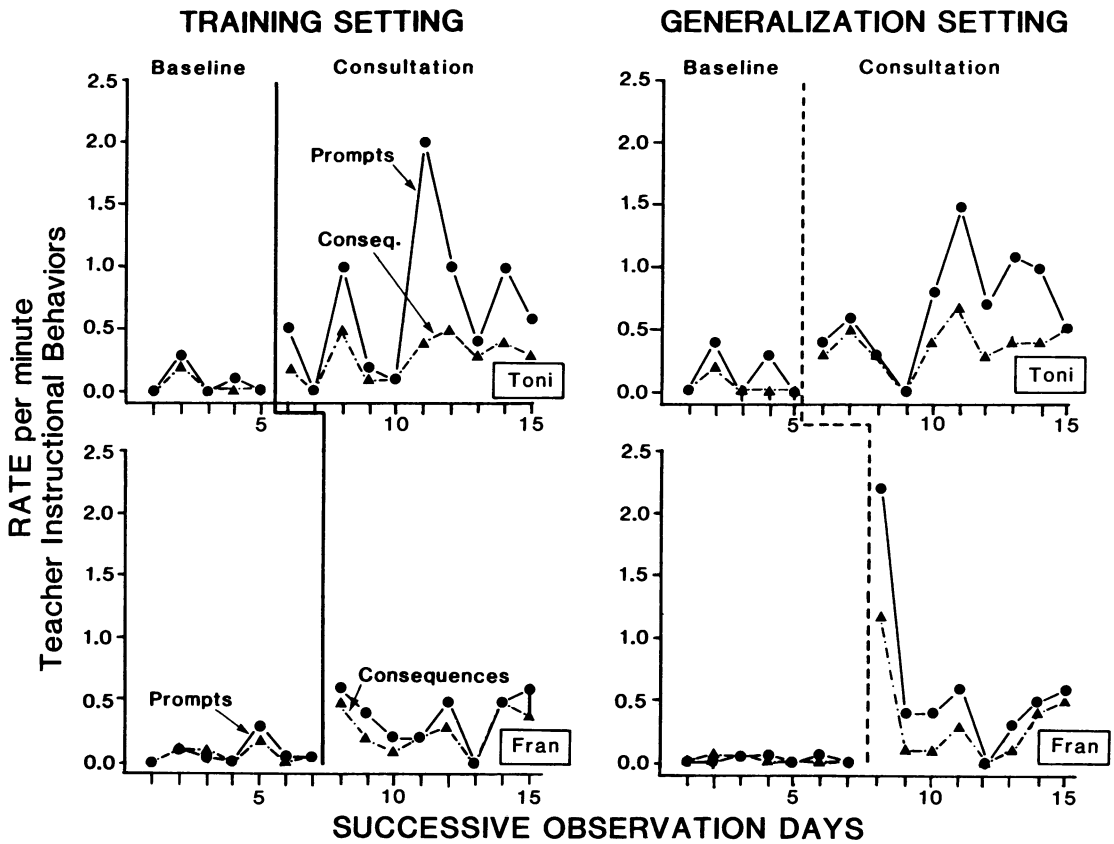

Figure 3. Rate of IEP-related instructional responses of teachers in Experiment 2.

recording techniques. Although the use of the video was reported as helpful by teachers in the first study, this equipment is often not available in regular preschool settings.

Experiment 2 also suggested that the consultation itself could be carried out effectively by a special education consulting teacher on the basis of written instructions and brief explanation but without other training in consultation techniques. This suggests the procedure may be relatively easy to learn and use for specialized support staff (e.g., special educators, speech therapists) with little or no formal training in consultation strategies. Because our work in Experiment 2 was confined to a single consulting teacher and did not include demonstration of experimental control over the consultant's behavior, the specific effects of the written instructions and brief explanation remain in need of direct investigation.

GENERAL DISCUSSION

The results of Experiments 1 and 2 support the effectiveness of nondirective consultation for increasing implementation of IEP-related instruction by regular preschool teachers in these two mainstream programs. Results further demonstrated that these teachers readily generalized use of intervention tactics they had devised for one setting to other nontraining settings. The procedure adds to the body of research on techniques for implementing individualized language instruction into existing classroom social and instructional routines (e.g., Halle et al., 1979; Haring, Neetz, Lovinger, Peck,

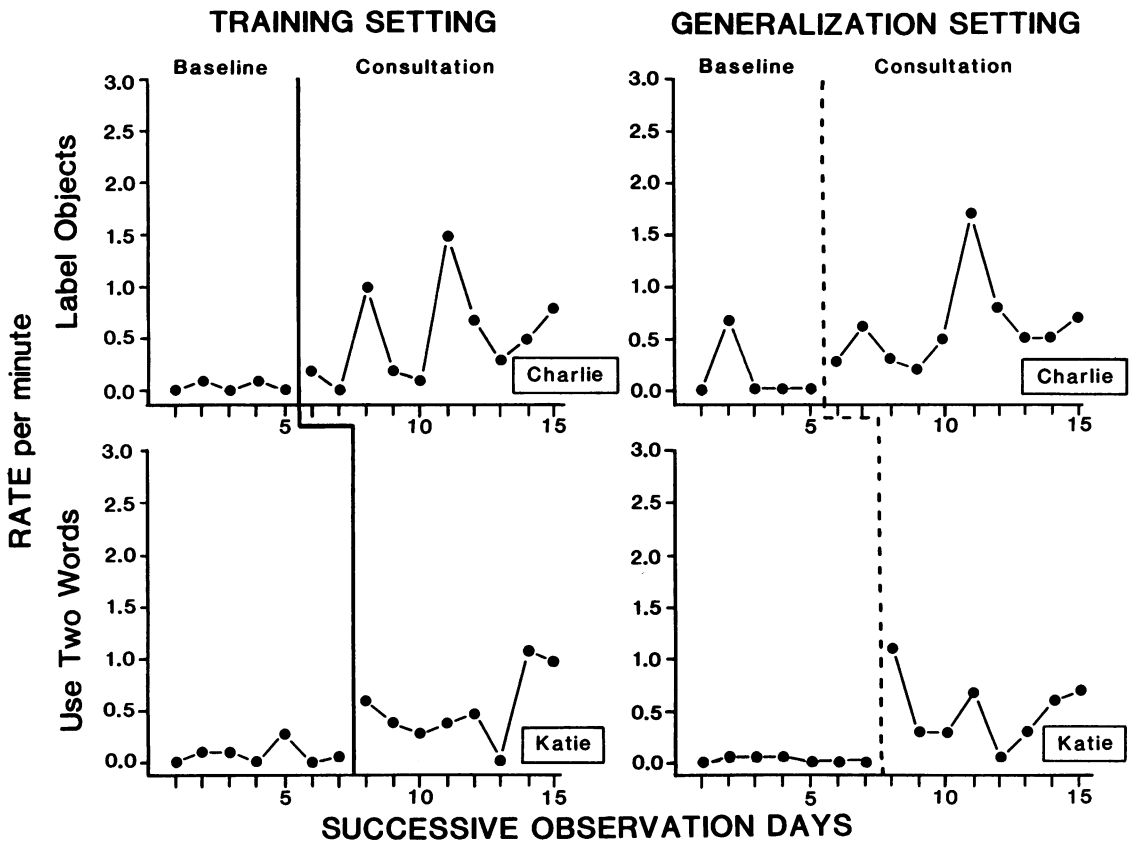

Figure 4. Rate of IEP-targeted responses for students in (teacher) training and generalization settings for Experiment 2.

& Semmel, 1987; Hart & Risley, 1975; Rogers-Warren & Warren, 1980). Our results extend existing research in this area by demonstrating that some language interventions for handicapped children can be successfully devised and implemented by regular preschool teachers with minimal direction and support by specialized staff.

Several limitations in the design of our research must be acknowledged. The present data demonstrate that regular preschool teachers can design and implement specialized instruction when this process is facilitated. However, because of the possibility of effects caused by teacher reactivity to the presence of observers in their classrooms (Reid & Whitman, 1983), the impact of the consultation procedure on implementation when teachers are not being observed remains unclear. Several factors led us to believe that although teachers were clearly aware of the observers, this may have had relatively little importance to the changes in specific teacher behaviors observed. First, observations were begun several weeks before the experimental procedures were conducted and were carried out by individuals who were already part of regular or volunteer staff. It was not uncommon for these staff members to monitor the behavior of the handicapped children using direct observation techniques. Second, interviews with teachers did not indicate that the teachers were aware of the specific purpose of the observations. Third, interviews with each of the teachers suggested that they were highly motivated to meet the needs of the handicapped children in their classrooms and were enthusiastic about continuing to use the techniques they had devised. Several comments reflected the notion that implementation was easy once techniques for embedding instruction were

identified. Because the interviews were conducted by one of the present authors, these results may also reflect some reactivity.

A second limitation to the present research is that we were unable to collect long-term maintenance data because the school term ended in the latter parts of both experiments. Although evaluation of long-term maintenance of effects of the intervention is clearly a priority for additional research, the present data demonstrate short-term maintenance of behavior changes resulting from the 2-hr consultation intervention. Programming for maintenance effects might well begin with providing brief consultations to regular teaching staff every 2 to 3 weeks—a rate well within the range of consultation resources available in the programs we observed.

A third issue is that although the results we obtained are promising for implementation of some types of individualized language instruction, this instruction may be among the most easily implemented within typical classroom routines. Additional research is needed to assess parameters of the feasibility of implementation for specialized instruction, including the curriculum domain of objectives (e.g., self-help, motor development, academics), the severity of the child's handicap, and the level of instructional demands operating on the regular teacher in addition to the special needs of mainstreamed children.

A fourth issue is ambiguity about the quality of instruction developed through the consultation. The global nature of the response definitions for teacher behavior did not allow rigorous evaluation of the effects of specific prompts and consequences used by the teachers, nor of the percentage of opportunities for prompting and giving consequences for correct student responses that were utilized by the teachers. For example, several teachers provided much higher rates of prompts than consequences for desired student responses. Moreover, consequences were often delivered less frequently than target behaviors occurred. Whether this represented an intentionally intermittent reinforcement procedure or missed opportunities for providing consequences for student behavior would be clarified by use of more detailed measures of teacher behavior. Although the present intervention was sufficient to increase IEP-related instruction as well as targeted student behavior, additional research is needed to evaluate the quality of teacher-generated instructional procedures from both technical (i.e., the correctness of instructional behaviors) and social validation perspectives.

Given the relatively small number of teachers in the present study, another useful focus for subsequent research would be identification of teacher variables that affect outcomes of this and related nondirective procedures (e.g., Haring et al., 1987). For example, there is some evidence to suggest that teachers become less willing to accommodate children with disabilities in regular classrooms as grade level increases (Larrivee & Cook, 1979; Stephens & Braun, 1980). Whether these procedures would work with such teachers is an important empirical question.

A final comment may be made regarding the nondirective nature of the intervention procedure. Although the present data do not provide evidence on the point, our conjecture was that teachers would implement instruction more readily if they, rather than the consultant, generated the specific interventions to be used. We derived this notion from recent evidence suggesting that noncompliance with therapeutic recommendations may be higher when clients are exposed to directive versus nondirective counseling (Patterson & Forgatch, 1985) and from the simple reasoning that teachers would be better able to devise interventions that fit easily into existing classroom routines than would outside consultants. A direct investigation of effects of directive versus nondirective consultation would be a useful priority for future research.

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